

VIRTUAL PATH ASYNCHRONOUS TRANSFER MODE SWITCHING IN A  
PROCESSING SATELLITE COMMUNICATIONS SYSTEM

ABSTRACT

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5 The present invention provides a method (100) for virtual  
path switching of an ATM cell on a processing communications  
satellite. The method includes establishing a set of VPIs  
(104), where each VPI is associated with an output port on the  
satellite. The method also includes establishing a set of VCIs  
(106), and assigning one VPI and one VCI to an ATM cell (108).  
10 The ATM cell may then be transmitted to, and then received by  
an input port of the satellite (110). The method also includes  
determining an associated output port (114), and transferring  
the ATM cell to that output port (116). The VPI may be divided  
into a control subfield and a routing subfield, and the  
15 associated output port may be determined based on the routing  
subfield (808). The present invention may also provide for  
multicast switching (400). For example, the method may include  
providing at least one multicast routing table (404). The VPI  
assigned to the ATM cell may be associated with a multicast  
20 output port. Thus, the ATM cell may be transferred to that  
multicast output port (418) and then received at the associated  
multicast module (420). A multicast group of VPIs may then be  
determined (422, 424), and the ATM cell may be reproduced  
several times (426). The reproduced cells may be reassigned  
25 with a new VPI from the multicast group of VPIs (428), and the  
reproduced cells are once again presented to and received by an  
input port of the satellite (430).